

VPDES PERMIT FACT SHEET

This addendum supplements the fact sheet which accompanied the existing July 29, 2012 permit and gives pertinent information concerning the owner-initiated modification of the VPDES permit listed below. This permit is being processed as a minor, municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharge results from the operation of a treatment works serving a motel, truck stop, and restaurants. This permit action consists of increasing facility design flow to 0.020 MGD and updating the permit to reflect a change in owner and changes to effluent limitations and special conditions. This addendum addresses only those sections of the 2012 Fact Sheet that require updating commensurate with this major modification.
SIC Code 4952, Sewerage Systems.

1. Facility Name and Address: Nottoway Motel and Restaurant STP
20316 Boydton Plank Road
Warfield, VA 23889

Location: 20316 Boydton Plank Road, Warfield
2. Permit No. VA0028291 Existing Permit Expiration Date: 6/30/2017
3. Owner: Melvin L. Davis Oil Co. Inc.
Address: PO Drawer C
Stony Creek, VA 23882
Telephone No: (804) 334-7291
Owner Contact: Melvin Davis, Jr.
4. Application Complete Date:
Permit Drafted By: Eric Seavey Date: August 21, 2014
DEQ Regional Office: Piedmont Regional Office
Reviewed By: Brad Ricks Date: August 29, 2014
Kyle Winter Date: October XX, 2014
Public Comment Dates: From October XX, 2014 to November XX, 2014
6. Operator License Requirements (18VAC160-20-130, 9VAC25-31-200.C): A Class 4 licensed operator is required for this facility. This determination is made in accordance with 18VAC160-20-130.C based on the proposed biological treatment methods typically associated with Class 3 operator requirements for plants with a design hydraulic capacity greater than 0.04 MGD.
9. Wastewater Flow and Treatment:

Outfall Number	Wastewater Source	Treatment	Design Flow
001	Motel, Restaurant, truck stop	Screening, settling (anoxic), aeration,, clarification, fixed media filtration, ultraviolet (UV) disinfection	0.020 MGD (increase from 0.016 MGD)

See **Attachment B** for a Site Diagram
10. Sewage Sludge Use and Disposal: When the 0.020 MGD facility becomes operational, the lagoon associated with the 0.016 MGD facility will be decommissioned as a treatment and storage lagoon to become solely a sludge storage lagoon. Any wastewater from the lagoon will be directed to the 0.020 MGD facility for treatment. Removal of sludge from this lagoon is not anticipated during the permit term. Lagoon management continues to be authorized by this VPDES permit and its operation is subject to the conditions specified therein.

12. **Material Storage:** The 0.020 facility is proposed to use ultraviolet disinfection; therefore, tablets used for chlorination and dechlorination will no longer be stored on site. There are no other materials of concern.
13. **Ambient Water Quality Information:** Reference discussion in the 2012 Fact Sheet; however, see **Attachment B** for updated ambient monitoring data and **Attachment A** for the revised Flow Frequency Determination provided by Jennifer V. Palmore, Senior Environmental Planner, of the DEQ PRO Planning Department and the 2012 Fact Sheet for 303(d) waters. The 303(d) impairment is unchanged since permit issuance.
16. **Effluent Screening & Limitation Development:** Reasonable potential analysis begins with a wasteload allocation analysis using MSTRANTI version 2b (a DEQ excel spreadsheet). Acute and chronic waste load allocations are calculated from criteria for surface water given in the VA Water Quality Standards (9VAC 25-260-140 and 155). Statistically derived permit limits are then obtained by inputting these acute and chronic waste load allocations along with reported data or default data values (see below) and required quantification limits into a DEQ statistical program, STATS.exe. The monitoring frequency used in STATS.exe reflects the monitoring frequency which would be required in the 2014 permit modification if a limit is required. Result of the STATS.exe analysis is summarized in Table 1 below.

A mixing zone analysis was performed for this discharge to the Nottoway River using a DEQ mixing zone program (MIX.exe) based on flow frequencies presented in item 5 above in addition to field observations of stream channel characteristics. The mixing zone analysis concluded that a complete 100% mix assumption is appropriate for calculating waste load allocations based on a 7Q10 and 30Q10 stream flow; however, a 20.02% mix assumption is appropriate for calculating waste load allocations based on the 1Q10 stream flow.

The reasonable potential analysis described above resulted in a limitation evaluation for ammonia. Total residual chlorine (TRC) has been removed from required analysis due to a change in treatment from an aerated lagoon with settling and chlorination/dechlorination to UV disinfection. The MSTRANTI printout, MSTRANTI Source Report, MIX.exe printout, and STATS.exe analytical results are included in **Attachment D**.

Table 1: STATS.exe Effluent Limitation Analysis

Parameter (units)	Receiving Water	Maximum Detected Value ¹	WLA _a	WLA _c	Human Health	Limit Needed?
Ammonia (mg/L)	Nottoway River	9.0	529	222	--	No

¹An ammonia default data value of 9.0 mg/L is used in place of effluent data in accordance with DEQ Guidance Memo No. 00-2011 (GM00-2011) in order to generate a limitation.

Table 2, Basis for Effluent Limitations, Outfall 001, 0.020 MGD facility

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		MONTHLY AVG		WEEKLY AVG		MIN	MAX	FREQ	SAMPLE TYPE
		mg/l	g/d	mg/l	g/d				
Flow	NA	NL		NA		NA	NL	1 per Day	Estimate
pH (S.U.)	1, 3	NA		NA		6.0	9.0	1 per Day	Grab
Total Suspended Solids (TSS)	3	30	2300	45	3400	NA	NA	1 per Month	Grab
cBOD ₅	2	14	1100	21	1600	NA	NA	1 per Month	Grab
Dissolved Oxygen	2	NA		NA		5.0 mg/L	NA	1 per Day	Grab
E. Coli (N/100 m)	1	126*		NA		NA	NA	1 per Week (Between 10 am & 4 pm)	Grab
TKN	2	20	1500	30	2300	NA	NA	1 per Month	Grab

*Monthly Geometric Mean

NA = Not Applicable

NL = No Limit, monitoring only

1. Water Quality Standards

- pH: A pH limitation of 6.0 - 9.0 Standard Units is assigned to all Class III waters in accordance with the Virginia Water Quality Standards, 9 VAC 25-260-50.
- E. Coli: According to 9 VAC 25-260-170, E. Coli shall not exceed a monthly geometric mean of 126 CFU/100 ml in freshwater.

2. Model

- Please see **Attachment F** regarding cBOD₅, Dissolved Oxygen, and TKN limitations.

3. Federal Effluent Guidelines

- pH and TSS limitations are established as the minimum level of effluent quality attainable by secondary treatment as specified in §40 CFR 133.102 of the Code of Federal Regulations.

18. Antibalancing Statement: All limitations in the 2014 permit modification are the same or more stringent than the limitations in the 2012 permit with the exception of Dissolved Oxygen, Biochemical Oxygen Demand (BOD₅), and Total Residual Chlorine (TRC). Due to the availability of a stream sanitation analysis model (see Attachment F) that was not previously available for consideration in development the 2012 permit or any prior permit reissuance, 9VAC25-31-220.L.2.b justifies the application of a less stringent effluent limitation for Dissolved Oxygen. The 2012 BOD₅ limitation is being removed and replaced with a Carbonaceous Biochemical Oxygen Demand (cBOD₅) effluent limitation. Because the cBOD₅ limitation is more stringent than the BOD₅ limitation, antibalancing requirements are met. The 2012 TRC limitation is being removed because chlorination is no longer permitted for disinfection; therefore antibalancing is allowable per 9VAC25-31-220.L.2.a.

20. Special Conditions:

Part I.B.1: Chlorine Prohibition

Rationale: This permit does not authorize chlorine disinfection for the 0.020 MGD facility due to a recommendation from the Virginia Department of Conservation and Recreation to minimize impacts to aquatic resources and due to a designation from the Virginia Department of Game and

Inland Fisheries of the Nottoway River and Waqua Creek as "Threatened and Endangered Species Waters".

21. Changes to 2012 Permit:
Cover Page: The owner changed from Nottoway Restaurant, Inc. to Melvin L. Davis Oil Co. Inc.

Changes to Part I.A for the 2014 Permit Modification: Part I.A.1 remains unchanged until receipt of a CTO to operate the 0.020 MGD plant. Part I.A.2 will then become effective with the following changes applicable to the 0.020 MGD plant:

Parameter Changed	Effluent Limits Changed						Monitoring Requirements Changed		Reason for Change	
	From			To			From	To		
cBOD ₅	None			Monthly AVG		Weekly AVG		None	1 per Month	Please see Attachment F regarding addition of cBOD ₅ limitations
				14 mg/L	1100 g/d	21 mg/L	1600 g/d			
BOD ₅	Monthly AVG		Weekly AVG		None			1 per Month	None	Please see Attachment F regarding removal of BOD ₅ limitations
	30 mg/L	1800 g/d	45 mg/L	2700 g/d						
TRC	Monthly AVG		Weekly AVG		None			1 per Day	None	TRC has been removed from required analysis due to a change in treatment from chlorination/ dechlorination to UV disinfection.
	54 µg/L		66 µg/L							
Dissolved Oxygen	Minimum			Minimum			1 per Day	No change	Please see Attachment F and antibacksliding statement regarding changes to Dissolved Oxygen limitations	
	6.0 mg/L			5.0 mg/L						
<i>E. Coli</i>	None			Monthly AVG			None	1 per Week (Between 10 am & 4 pm)	The <i>E. Coli</i> limitation has been removed from the special conditions section Part I.B and included in the limitations and monitoring requirements section Part I.A.1.	
				126 (Monthly Geometric Mean)						
TKN	None			Monthly AVG		Weekly AVG		None	1 per Month	Please see Attachment F regarding addition of TKN limitations
				20 mg/L	1500 g/d	30 mg/L	2300 g/d			

Other Changes to Part I.A for 2012 Permit

Footnote (a) revised to identify design flow of 20,000 gallons per day. This is an increase from 16,000 gallons per day.

Footnote (b) removed.

Footnote (c) renamed as Footnote (b)

Changes to 2012 Part I.B for the 2014 Permit Modification		
<u>From</u>	<u>To</u>	<u>Rationale</u>
Part I.B.1	Part I.B.1	Additional TRC Limitations and Monitoring Requirements: Added language stating the Permit will not allow chlorine disinfection upon issuance of CTO for the 0.020 MGD facility.
Part I.B.12	Part I.B.12	Compliance Reporting: Quantification level for cBOD5 added.
There were no changes to Part II of the 2012 Permit for the 2014 Permit Modification		

24. Public Notice Information required by 9 VAC 25-31-280 B:

All pertinent information is on file and may be inspected or copied by contacting Bradford Ricks at:

Piedmont Regional Office
4949-A Cox Rd
Glen Allen, VA 23060
(804) 527-5129
Bradford.Ricks@deq.virginia.gov

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state: 1) the reason why a hearing is requested. 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment.

25. 303(d) Listed Segments / TMDL: Although the receiving stream was not assessed for any designated use during the 2012 305(b)/303(d) Water Quality Assessment, the Nottoway River was assessed as a Category 5A water ("A Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant and requires a TMDL (303d list).") The applicable fact sheet for 303(d) waters is included in **Attachment A**. The Recreation Use is impaired due to *E. coli* violations identified at monitoring station 5ANTW109.02 located at the Route 1 bridge. This segment of the Nottoway River was considered fully supporting of the Aquatic Life and Wildlife Uses and was not assessed for the Fish Consumption or Wildlife Uses.

This discharge is not included in an approved TMDL as an associated TMDL has not yet been developed and approved. The discharge will neither cause nor contribute to the identified *E. coli* impairment due to the *E. coli* limitations included in Part I.B of this permit.

26. Additional Comments:

Public Comment: During the public comment period of October XX, 2014 through November XX, 2014, the public notice was published on October XX, 2014 and October XX, 2014 in the Brunswick Times-Gazette. County Administrator Woolridge, Board Chairman Tyler, and the Southside Planning District Commission were also directly provided with a copy of the public notice by mail. No comments were received.

Virginia Department of Conservation and Recreation (DCR) Comment: DCR review of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations, was provided in a letter, dated May 27, 2014, and is provided in **Attachment E**. DCR also recommended adoption of EPA ammonia limits to be protective of mussels. The DEQ addressed the recommendation to adopt EPA ammonia limits in a response email dated June 2, 2014, provided in **Attachment E**. DEQ has also coordinated review with VDGIF to ensure compliance with protected species legislation. DCR supports the use of Ultraviolet (UV)

and/or ozone to replace chlorination disinfection and utilization of new technologies as they become available to improve water quality.

Virginia Department of Game and Inland Fisheries (DGIF) Comment: By email, dated June 27, 2014, provided in **Attachment E**, Ernie Aschenbach of DGIF, supported the upgrading of the facility to allow substitution of Ultraviolet disinfection for existing disinfection via chlorination, as proposed.

United States Fish and Wildlife Service (USFWS) Comment: By email, dated May 14, 2014, provided in **Attachment E**, Brett Hillman of USFWS, provided comments regarding determination if Ammonia limits are required for the facility discharge. The DEQ addressed the USFWS comments regarding determination if Ammonia limits are required in a response email dated June 2, 2014, provided in **Attachment E**.

EPA Comment: EPA has waived the right to comment on this modification

Virginia Department of Health (VDH) Comment: By memo, dated April 25, 2014, Jeffrey S. Wells of VDH, stated that there are no public water supply raw water intakes within 15 miles downstream of the discharge.

Fees: Annual maintenance fees are up to date, last paid on October 2, 2013 for the 2013 Billing Year. The permit modification fee was received by the Department in March 2014.

Monitoring Reductions for Reissuances: As a new/modified facility, monitoring frequency reductions do not apply at the time of this permit modification. The facility can be considered for monitoring reduction after it produces 3 years of effluent data under the new/modified permit.

Controversial Project?: This modification is not expected to be controversial.

Notification of Local Governments and Riparian Landowners: The required local government notification of the VPDES permit modification application was sent to County Administrator Woolridge by letter dated May 5, 2014. There are three riparian landowner within one half mile downstream of the discharge and notice of the permit application was sent to the property owners by letter dated May 5, 2014.

Planning Conformance Statement:

Owner Comment:

27. Attachments:
- A. Flow Frequency Determination Memo
 - B. Site Diagram and Location Map
 - C. Ambient Monitoring Data
 - D. MSTRANTI, MIX.exe, and STATS.exe results
 - E. Threatened and Endangered Species Review
 - F. Stream Sanitation Memo

ATTACHMENT A
Flow Frequency Determination Memo

ATTACHMENT B

Site Diagram and Location Map

ATTACHMENT C

Ambient Monitoring Data

ATTACHMENT D

2014 MSTRANTI, Mix.exe and STATS.exe results;
2012 MSTRANTI, Mix.exe, and STATS.exe results

ATTACHMENT E

Threatened and Endangered Species Reviews

ATTACHMENT F

Stream Sanitation Memo